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July 10, 2007

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Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**Art Unit 2611**

**Attn: Certificate of Correction Branch**

Re: U.S. Utility Patent  
Patent No. 7,110,444 B1; Issued: September 19, 2006  
For: **Wireless Local Area Network (WLAN) Using Universal Frequency  
Translation Technology Including Multi-Phase Embodiments and Circuit  
Implementations**  
Inventors: Sorrells *et al.*  
Our Ref: 1744.0630003

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Request for Certificate of Correction Under 37 C.F.R. § 1.322;
2. Exhibit A (4 pages of Examiner-initialed PTO-1449 forms); and
3. Form PTO/SB/44 (5 pages).

The above listed documents are being electronically submitted through EFS-Web.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Jeffrey T. Helvey  
Attorney for Patentees  
Registration No. 44,757

JTH/jeg  
Enclosures

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent of:

Sorrells *et al.*

Patent. No.: 7,110,444 B1

Issued: September 19, 2006

For: **Wireless Local Area Network  
(WLAN) Using Universal  
Frequency Translation Technology  
Including Multi-Phase  
Embodiments and Circuit  
Implementations**

Confirmation No.: 2377

Art Unit: 2611

Examiner: Kim, Kevin

Atty. Docket: 1744.0630003

**Request for Certificate of Correction  
Under 37 C.F.R. § 1.322**

*Attn: Certificate of Correction Branch*

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

It is hereby requested that a Certificate of Correction under 37 C.F.R. § 1.322 be issued for the above-captioned United States Patent. This Certificate of Correction is being requested due to mistakes which appear in the printed patent. These mistakes were made by the U.S. Patent and Trademark Office.

Specifically, the printed patent contains the following errors for which a Certificate of Correction is respectfully requested:

In Section (56), References Cited, a number of references that were cited and considered are missing. The specific references are those that were listed on pages 15-18 of the Information Disclosure Statement PTO-1449 form, filed December 15, 2004.

Copies of these Examiner-initialed pages are enclosed as Exhibit A for the convenience of the Examiner.

***Remarks***

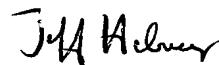
The above-noted corrections do not involve such changes in the patent as would constitute new matter or would require reexamination.

A completed Form PTO/SB/44 accompanies this request, with the above-noted corrections printed thereon. Accordingly, a Certificate of Correction is believed proper and issuance thereof is respectfully requested.

The Commissioner is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey  
Attorney for Patentees  
Registration No. 44,757

Date: 7/10/07

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632947\_1.DOC

# **Exhibit A**

FORM PTO-1449 <b>INFORMATION DISCLOSURE STATEMENT</b>		ATTY. DOCKET NO. 1744.0630003	APPLICATION NO. 09/632,856
		APPLICANT Sorrells et al.	
		FILING DATE August 4, 2000	GROUP 2634

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA15	4,870,859	09/1989	Oishi et al.	375	82	
	AB15	4,871,987	10/1989	Kawase	332	100	
	AC15	4,885,587	12/1989	Wiegand et al.	42	14	
	AD15	4,885,756	12/1989	Fontanes et al.	375	82	
	AE15	4,888,557	12/1989	Puckette, IV et al.	329	341	
	AF15	4,890,302	12/1989	Mulwijk	375	80	
	AG15	4,893,316	01/1990	Janc et al.	375	44	
	AH15	4,893,341	01/1990	Gehring	381	7	
	AI15	4,894,766	01/1990	De Agro	363	159	

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ15	JP 6-237276	08/1994	JP	H04L	27/20	No
	AK15	JP 8-23359	01/1996	JP	H04L	27/20	No
	AL15	JP 47-2314	02/1972	JP	—	—	Yes (Doc. AP53)
	AM15	JP 58-7903	01/1983	JP	H03C	1/02	Partial (Doc. AQ53)

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	15	Karasawa, Y. et al., "A New Prediction Method for Tropospheric Scintillation on Earth-Space Paths," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 36, No. 11, pp. 1608-1614 (November 1988).
	AO	15	Kirsten, J. and Fleming, J., "Undersampling reduces data-acquisition costs for select applications," <i>EDN</i> , Cahners Publishing, Vol. 35, No. 13, pp. 217-222, 224, 226-228 (June 21, 1990).
	AP	15	Lam, W.K. et al., "Measurement of the Phase Noise Characteristics of an Unlocked Communications Channel Identifier," <i>Proceedings Of the 1993 IEEE International Frequency Control Symposium</i> , IEEE, pp. 283-288 (June 2-4, 1993).
	AQ	15	Lam, W.K. et al., "Wideband sounding of 11.6 Ghz transhorizon channel," <i>Electronics Letters</i> , IEE, Vol. 30, No. 9, pp. 738-739 (April 28, 1994).
	AR	15	Larkin, K.G., "Efficient demodulator for bandpass sampled AM signals," <i>Electronics Letters</i> , IEE, Vol. 32, No. 2, pp. 101-102 (January 18, 1996).

EXAMINER	11	DATE CONSIDERED	11
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.			

FORM PTO-1449 <b>INFORMATION DISCLOSURE STATEMENT</b>			ATTY. DOCKET NO. 1744.0630003	APPLICATION NO. 09/632,856
			APPLICANT Sorrells et al.	
			FILING DATE August 4, 2000	GROUP 2634

**U.S. PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA16	4,896,152	01/1990	Tiemann	340	853	
	AB16	4,902,979	02/1990	Puckette, IV	329	343	
	AC16	4,908,579	03/1990	Tawfik et al.	328	167	
	AD16	4,910,752	03/1990	Yester, Jr. et al.	375	75	
	AE16	4,914,405	04/1990	Wells	331	25	
	AF16	4,920,510	04/1990	Senderowicz et al.	364	825	
	AG16	4,922,452	05/1990	Larsen et al.	365	45	
	AH16	4,931,921	06/1990	Anderson	363	163	
	AI16	4,944,025	07/1990	Gehring et al.	455	207	

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ16	JP 58-133004	08/1983	JP	H03D	1/00	No
	AK16	JP 60-58705	04/1985	JP	H03D	7/00	No
	AL16	JP 4-123614	04/1992	JP	H03K	19/0175	No
	AM16	JP 4-127601	04/1992	JP	H03D	7/00	No

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

	AN	16	Lau, W.H. et al., "Analysis of the Time Variant Structure of Microwave Line-of-sight Multipath Phenomena," <i>IEEE Global Telecommunications Conference &amp; Exhibition</i> , IEEE, pp. 1707-1711 (November 28 - December 1, 1988).
	AO	16	Lau, W.H. et al., "Improved Prony Algorithm to Identify Multipath Components," <i>Electronics Letters</i> , IEE, Vol. 23, No. 20, pp. 1059-1060 (September 24, 1987).
	AP	16	Lesage, P. and Audoin, C., "Effect of Dead-Time on the Estimation of the Two-Sample Variance," <i>IEEE Transactions on Instrumentation and Measurement</i> , IEEE Instrumentation and Measurement Society, Vol. IM-28, No. 1, pp. 6-10 (March 1979).
	AQ	16	Liechti, C.A., "Performance of Dual-gate GaAs MESFET's as Gain-Controlled Low-Noise Amplifiers and High-Speed Modulators," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE Microwave Theory and Techniques Society, Vol. MTT-23, No. 6, pp. 461-469 (June 1975).
	AR	16	Linnenbrink, T.E. et al., "A One Gigasample Per Second Transient Recorder," <i>IEEE Transactions on Nuclear Science</i> , IEEE Nuclear and Plasma Sciences Society, Vol. NS-26, No. 4, pp. 4443-4449 (August 1979).

EXAMINER		DATE CONSIDERED
	11	11

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449  <u>INFORMATION DISCLOSURE STATEMENT</u>			ATTY. DOCKET NO. 1744.0630003	APPLICATION NO. 09/632,856
			APPLICANT Sorrells et al.	
			FILING DATE August 4, 2000	GROUP 2634

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA17	4,955,079	09/1990	Connerney et al.	455	325	
	AB17	4,965,467	10/1990	Bilterlist	307	352	
	AC17	4,967,160	10/1990	Quilev et al.	328	16	
	AD17	4,970,703	11/1990	Hariharan et al.	367	138	
	AE17	4,982,353	01/1991	Jacob et al.	364	724.10	
	AF17	4,984,077	01/1991	Uchida	358	140	
	AG17	4,995,055	02/1991	Weinberger et al.	375	5	
	AH17	5,003,621	03/1991	Gailus	455	209	
	AI17	5,005,169	04/1991	Bronder et al.	370	76	

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ17	JP 5-175730	07/1993	JP	H03D	1/00	No
	AK17	JP 5-175734	07/1993	JP	H03D	3/00	No
	AL17	JP 7-154344	06/1995	JP	H04B	14/06	No
	AM17	JP 7-307620	11/1995	JP	H03D	1/18	No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	17	Liou, M.L., "A Tutorial on Computer-Aided Analysis of Switched-Capacitor Circuits," <i>Proceedings of the IEEE</i> , IEEE, Vol. 71, No. 8, pp. 987-1005 (August 1983).
	AO	17	Lo, P. et al., "Coherent Automatic Gain Control," <i>IEE Colloquium on Phase Locked Techniques</i> , IEE, pp. 2/1-2/6 (March 26, 1980).
	AP	17	Lo, P. et al., "Computation of Rain Induced Scintillations on Satellite Down-Links at Microwave Frequencies," <i>Third International Conference on Antennas and Propagation (ICAP 83)</i> , pp. 127-131 (April 12-15, 1983).
	AQ	17	Lo, P.S.L.O. et al., "Observations of Amplitude Scintillations on a Low-Elevation Earth-Space Path," <i>Electronics Letters</i> , IEE, Vol. 20, No. 7, pp. 307-308 (March 29, 1984).
	AR	17	Madani, K. and Althison, C.S., "A 20 Ghz Microwave Sampler," <i>IEEE Transactions on Microwave Theory and Techniques</i> , IEEE Microwave Theory and Techniques Society, Vol. 40, No. 10, pp. 1960-1963 (October 1992).

EXAMINER	11	DATE CONSIDERED	11
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			APPLICANT Sorrells et al.	
			FILING DATE August 4, 2000	GROUP 2634

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA	18 5,006,810	04/1991	Popescu	328	167	
	AB	18 5,010,585	04/1991	Garcia	455	118	
	AC	18 5,014,304	05/1991	Nicollini et al.	379	399	
	AD	18 5,015,863	05/1991	Sutton	329	361	
	AE	18 5,017,924	05/1991	Guiberteau et al.	342	195	
	AF	18 5,020,149	05/1991	Hemmie	455	325	
	AG	18 5,020,154	05/1991	Zierhut	455	608	
	AH	18 5,052,050	09/1991	Collier et al.	455	296	
	AI	18 5,065,409	11/1991	Hughes et al.	375	91	

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ	18 JP 55-66057	05/1980	JP	G06K	7/10	No
	AK	18 JP 63-65587	03/1988	JP	G06K	7/10	No
	AL	18 JP 63-153691	06/1988	JP	G06K	17/00	No
	AM	18 EP 0 276 130 A2&A3	07/1988	EP	H03D	7/00	N/A

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	18	Marsland, R.A. et al., "130 Ghz GaAs monolithic integrated circuit sampling head," <i>Appl. Phys. Lett.</i> , American Institute of Physics, Vol. 55, No. 6, pp. 592-594 (August 7, 1989).
	AO	18	Martin, K. and Sedra, A.S., "Switched-Capacitor Building Blocks for Adaptive Systems," <i>IEEE Transactions on Circuits and Systems</i> , IEEE Circuits and Systems Society, Vol. CAS-28, No. 6, pp. 576-584 (June 1981).
	AP	18	Marzano, F.S. and d'Auria, G., "Model-based Prediction of Amplitude Scintillation variance due to Clear-Air Tropospheric Turbulence on Earth-Satellite Microwave Links," <i>IEEE Transactions on Antennas and Propagation</i> , IEEE Antennas and Propagation Society, Vol. 46, No. 10, pp. 1506-1518 (October 1998).
	AQ	18	Matricciani, E., "Prediction of fade durations due to rain in satellite communication systems," <i>Radio Science</i> , American Geophysical Union, Vol. 32, No. 3, pp. 935-941 (May-June 1997).
K	AR	18	McQueen, J.G., "The Monitoring of High-Speed Waveforms," <i>Electronic Engineering</i> , Morgan Brothers Limited, Vol. XXIV, No. 296, pp. 436-441 (October 1952).

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**UNITED STATES PATENT AND TRADEMARK OFFICE**  
**CERTIFICATE OF CORRECTION**

Page 1 of 5

PATENT NO: 7,110,444 B1

DATED: September 19, 2006

INVENTORS: Sorrells *et al.*

It is certified that error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below.

**Section (56)**

Under "U.S. Patent Documents", please insert the following citations:

4,870,659	09/1989	Oishi et al.
4,871,987	10/1989	Kawase
4,885,587	12/1989	Wiegand et al.
4,885,756	12/1989	Fontanes et al.
4,888,557	12/1989	Puckette, IV et al.
4,890,302	12/1989	Muilwijk
4,893,316	01/1990	Janc et al.
4,893,341	01/1990	Gehring
4,894,766	01/1990	De Agro
4,896,152	01/1990	Tiemann
4,902,979	02/1990	Puckette, IV
4,908,579	03/1990	Tawfik et al.
4,910,752	03/1990	Yester, Jr. et al.
4,914,405	04/1990	Wells
4,920,510	04/1990	Senderowicz et al.
4,922,452	05/1990	Larsen et al.
4,931,921	06/1990	Anderson
4,944,025	07/1990	Gehring et al.
4,955,079	09/1990	Connerney et al.
4,965,467	10/1990	Bilterijst
4,967,160	10/1990	Quievy et al.
4,970,703	11/1990	Hariharan et al.
4,982,353	01/1991	Jacob et al.
4,984,077	01/1991	Uchida
4,995,055	02/1991	Weinberger et al.

**MAILING ADDRESS OF SENDER (Please do not use customer number below):**

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Washington DC 20005-3934

Atty. Dkt. No. 1744.0630003

This collection of information is required by 37 CFR 1.322, 1.323 and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you are required to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 2 of 5

PATENT NO: 7,110,444 B1

DATED: September 19, 2006

INVENTORS: Sorrells *et al.*

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5,003,621	03/1991	Gailus
5,005,169	04/1991	Bronder et al.
5,006,810	04/1991	Popescu
5,010,585	04/1991	Garcia
5,014,304	05/1991	Nicollini et al.
5,015,963	05/1991	Sutton
5,017,924	05/1991	Guiberteau et al.
5,020,149	05/1991	Hemmie
5,020,154	05/1991	Zierhut
5,052,050	09/1991	Collier et al.
5,065,409	11/1991	Hughes et al.

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JP 6-237276	08/1994
JP 8-23359	01/1996
JP 47-2314	02/1972
JP 58-7903	01/1983
JP 58-133004	08/1983
JP 60-58705	04/1985
JP 4-123614	04/1992
JP 4-127601	04/1992
JP 5-175730	07/1993
JP 5-175734	07/1993

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# UNITED STATES PATENT AND TRADEMARK OFFICE

## CERTIFICATE OF CORRECTION

Page 3 of 5

PATENT NO: 7,110,444 B1

DATED: September 19, 2006

INVENTORS: Sorrells *et al.*

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Section (56)

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JP 7-154344	06/1995
JP 7-307620	11/1995
JP 55-66057	05/1980
JP 63-65587	03/1988
JP 63-153691	06/1988
EP 0 276 130 A2&A3	07/1988

Under "Other Publications", please insert the following citations:

Karasawa, Y. *et al.*, "A New Prediction Method for Tropospheric Scintillation on Earth-Space Paths," *IEEE Transactions on Antennas and Propagation*, IEEE Antennas and Propagation Society, Vol. 36, No. 11, pp. 1608-1614 (November 1988).

Kirsten, J. and Fleming, J., "Undersampling reduces data-acquisition costs for select applications," *EDN*, Cahners Publishing, Vol. 35, No. 13, pp. 217-222, 224, 226-228 (June 21, 1990).

Lam, W.K. *et al.*, "Measurement of the Phase Noise Characteristics of an Unlocked Communications Channel Identifier," *Proceedings Of the 1993 IEEE International Frequency Control Symposium*, IEEE, pp. 283-288 (June 2-4, 1993).

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## CERTIFICATE OF CORRECTION

Page 4 of 5

PATENT NO: 7,110,444 B1

DATED: September 19, 2006

INVENTORS: Sorrells *et al.*

It is certified that error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below.

Section (56)

Under "Other Publications", please insert the following citations (continued from page 3):

Lau, W.H. *et al.*, "Improved Prony Algorithm to Identify Multipath Components," *Electronics Letters*, IEE, Vol. 23, No. 20, pp. 1059-1060 (September 24, 1987).

Lesage, P. and Audoin, C., "Effect of Dead-Time on the Estimation of the Two-Sample Variance," *IEEE Transactions on Instrumentation and Measurement*, IEEE Instrumentation and Measurement Society, Vol. IM-28, No. 1, pp. 6-10 (March 1979).

Liechti, C.A., "Performance of Dual-gate GaAs MESFET's as Gain-Controlled Low-Noise Amplifiers and High-Speed Modulators," *IEEE Transactions on Microwave Theory and Techniques*, IEEE Microwave Theory and Techniques Society, Vol. MTT-23, No. 6, pp. 461-469 (June 1975).

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Liou, M.L., "A Tutorial on Computer-Aided Analysis of Switched-Capacitor Circuits," *Proceedings of the IEEE*, IEEE, Vol. 71, No. 8, pp. 987-1005 (August 1983).

Lo, P. *et al.*, "Coherent Automatic Gain Control," *IEE Colloquium on Phase Locked Techniques*, IEE, pp. 2/1-2/6 (March 26, 1980).

Lo, P. *et al.*, "Computation of Rain Induced Scintillations on Satellite Down-Links at Microwave Frequencies," *Third International Conference on Antennas and Propagation (ICAP 83)*, pp. 127-131 (April 12-15, 1983).

Lo, P.S.L.O. *et al.*, "Observations of Amplitude Scintillations on a Low-Elevation Earth-Space Path," *Electronics Letters*, IEE, Vol. 20, No. 7, pp. 307-308 (March 29, 1984).

Madani, K. and Aithison, C.S., "A 20 Ghz Microwave Sampler," *IEEE Transactions on Microwave Theory and Techniques*, IEEE Microwave Theory and Techniques Society, Vol. 40, No. 10, pp. 1960-1963 (October 1992).

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**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**Page 5 of 5

PATENT NO: 7,110,444 B1

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INVENTORS: Sorrells *et al.*

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**Section (56)**

Under "Other Publications", please insert the following citations (continued from page 4):

Marsland, R.A. *et al.*, "130 Ghz GaAs monolithic integrated circuit sampling head," *Appl. Phys. Lett.*, American Institute of Physics, Vol. 55, No. 6, pp. 592-594 (August 7, 1989).

Martin, K. and Sedra, A.S., "Switched-Capacitor Building Blocks for Adaptive Systems," *IEEE Transactions on Circuits and Systems*, IEEE Circuits and Systems Society, Vol. CAS-28, No. 6, pp. 576-584 (June 1981).

Marzano, F.S. and d'Auria, G., "Model-based Prediction of Amplitude Scintillation variance due to Clear-Air Tropospheric Turbulence on Earth-Satellite Microwave Links," *IEEE Transactions on Antennas and Propagation*, IEEE Antennas and Propagation Society, Vol. 46, No. 10, pp. 1506-1518 (October 1998).

Matricciani, E., "Prediction of fade durations due to rain in satellite communication systems," *Radio Science*, American Geophysical Union, Vol. 32, No. 3, pp. 935-941 (May-June 1997).

McQueen, J.G., "The Monitoring of High-Speed Waveforms," *Electronic Engineering*, Morgan Brothers Limited, Vol. XXIV, No. 296, pp. 436-441 (October 1952).

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